

Sponsor: The Corporate Source of YAI and Broadview Networks

Customer: Mr. Joe Eckhoff

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SURC ABSTRACT

Improving Production Capacity in a Facility with Workers with Differential Abilities

The primary goal of this capstone design project of the Eureka! Designs team is to improve the production capacity of a facility staffed with workers with differential abilities. The workers are involved with a packaging and shipping process. In order to accomplish this, Eureka! Designs examined the production process of the facility, researched well-established production methodologies (such as theories laid forth in *The Race!*, by Eliyahu Goldratt, and the use of “Kanban” systems), and applied their findings in three specific and unique ways. The three areas are: waste cardboard removal, warehouse production layout, and assisted box folding. These production design changes must be extremely accessible due to the nature of the employee’s differential abilities. Additionally, the solutions must be safe for use, sustainable, low maintenance, replaceable, and financially sound. Working closely with their customer and following the design process as described by Dr. Eggert in his book *Engineering Design*, Eureka! Designs has formulated a design solution for each of the three aspects of the design problem identified in their research. A commercially available waste cardboard removal cart has been selected, an improved production layout has been developed, and an assisted box folding device is in development. It is anticipated that implementing the design solutions will improve the production capacity by at least 20% while making their work experience easier and more enjoyable.

Keywords: Differential abilities, service learning project, production process, waste removal, floor layout, assisted box folding/folder

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